

## **AMENDMENT NO. 2 AUGUST 2022**

**TO**

### **IS 10951 : 2020 SPECIFICATION FOR POLYPROPYLENE (PP) MATERIAL FOR MOULDING AND EXTRUSION**

*( Second Revision )*

*(Foreword, Para 9)* — Insert the following after para 9:

‘Polypropylene manufacturing is a continuous process of polymerization and capable to produce numerous types of grades based upon Melt Flow Index (MFI) or Melt Flow Rate (MFR) which are used by final converters for manufacturing extruded and moulded products (flexible films, raffia tapes, mono filaments, pipes, blow, injection, roto moulded products and various other products).

Since polymerization is a continuous process, during transition from one grade to another there will be virgin polymer grades produced with broad Melt Flow Index (MFI) or Melt Flow Rate (MFR) range with respect to declared specifications set by respective resin manufacturer and will be classified as blending resins or grades. These grades are used as blends with other polymer grades by the converters in various applications without affecting performance in the intended end-use application.’

*(Page 1, clause 1.2)* — Substitute the following for the existing:

**‘1.2** This standard is applicable to all propylene homopolymers and to copolymers of propylene with a content of other 1-olefins of less than 50 percent (m/m), as well as blends of polymers containing at least 50 percent (m/m) of aforementioned polymers.’

*(Page 2, Table 2, Code Z)* — Substitute the last row for Code Z as follows:

<i>Code</i>	<i>Intended Application and/or Method of Processing</i>
Z	Blending/Miscellaneous

*(Page 6, clause 6.2.1.1)* — Substitute the following for the existing:

#### **‘6.2.1.1 Melt Mass-Flow Rate (MFR)**

**6.2.1.1.1** The melt mass flow rate of the material shall be designated as per Table 3, based on the value as agreed to between the purchaser and the supplier. It shall be determined by the method prescribed in IS 13360 (Part 4/Sec 1)/ASTM D1238. The value of melt flow rate shall be within  $\pm$  20 percent of the specified nominal melt flow rate, if this is 1 g/10 min or above and shall be within  $\pm$  30 percent of the specified nominal melt flow rate, if this is less than 1 g/10 min.

**Price Group 2**

## **Amendment No. 2 to IS 10951 : 2020**

**6.2.1.1.2** In case of resin or grade used for blending applications, designation code of MFI in data block 4 will be based on the actual tested value for MFI or MFR of batch/lot and ‘intended application or method of processing’ will be codified as ‘Z’ (*Clause 3.4*). The value of melt flow rate may vary up to  $\pm 40$  percent from the measured/reported value.’

(*Page 6, clause 6.2.1.2*) — Substitute the following for the existing: ‘**6.2.1.2**

### *Flexural Modulus*

The flexural modulus of the material shall be designated as per Table 4, based on the value as agreed to between the purchaser and the supplier. It shall be determined by the method prescribed in IS 13360 (Part 5/Sec 7)/ASTM D790. The value of flexural modulus shall be within  $\pm 20$  percent of the specified flexural modulus, if this is 1 200 MPa or above and shall be within  $\pm 30$  percent of the specified flexural modulus, if this is less than 1 200 MPa.’

(*Page 7, clause 6.2.1.3*) — Substitute the following for the existing: ‘**6.2.1.3 Izod**

### *Impact Strength*

The izod impact strength of the material shall be designated as per Table 5, based on the value as agreed to between the purchaser and the supplier. It shall be determined by the method prescribed in 13360 (Part 5/ Sec 4)/ASTM D256. The value of izod impact strength shall be within  $\pm 20$  percent of the specified izod impact if this is less than 120 J/m and shall be within  $\pm 30$  percent of the specified izod impact strength if this is 120 J/m or above.’

(*Page 8, clause 6.4.2*) — Insert the following after Clause **6.4.2**:

‘**6.4.3** The requirements mentioned in **6.4.2** will remain valid as long as the chemical composition and manufacturing process remains the same. In case of any change in chemical composition and/or manufacturing processes, the requirements mentioned in **6.4.2** needs to be tested.’

(*Page 8, clause 7*) — Substitute the following for the existing clause:

## **‘7 TESTS**

**7.1** For product approval in the manufacturing of polypropylene materials and the compounds made thereof, the following shall be tested:

- a) Melt mass flow rate (**6.2.1.1**) for polypropylene material and polypropylene compounds;
- b) Flexural modulus (**6.2.1.2**) for polypropylene compounds only; and
- c) Izod impact strength (**6.2.1.3**) for polypropylene compounds only.

## **7.2 Product Identification Tests for Compounded Materials**

**Amendment No. 2 to IS 10951 : 2020**

For the compounded materials to establish the end use application properties, the applicable requirements as listed in **6.3.2** shall be tested, by correlating the required properties of the compounded materials.'

(*Page 11, Annex B*) — Delete.

(*Amendment No. 1, Page 2, clause D-2*) — Insert the following para at the end: 'The sample preparation shall be as per the intended end-use of material.'

(PCD 12)

---

Publication Unit, BIS, New Delhi, India